

ATTACHMENT D

Engineering Evaluation for Authority to Construct

**(ADDENDUM01)
FOR
AUTHORITY TO CONSTRUCT
ENGINEERING EVALUATION**

Application No.: A/C 20328(Rev02)

Date: August 07, 2008

Evaluation by: Bruce Nixon

A. FACILITY NAME:

Chevron Sacramento Terminal

B. LOCATION OF EQUIPMENT:

2420 Front Street
Sacramento

C. PURPOSE OF ADDENDUM:

Discussions with Chevron have been ongoing since A/C No. 20328 was issued August 13, 2007 regarding the number of parameters that the modified CEM system can and should measure and record.

The original A/C required that the CEM system monitor and record -

1. methane - ppmv continuously, as propane
2. NMHC - ppmv continuously, as propane
3. THC - ppmv continuously, as propane

Chevron and the CEM system supplier, John Zink Company, have requested that the parameters that are monitored and recorded be changed to -

1. NMHC - ppmv continuously, as propane
2. THC - ppmv continuously, as propane
3. NMHC - ppmv, 3 hour rolling average, as propane (the units of the emission limit)

The SMAQMD agrees with the requested change because if two of the three parameters (methane, NMHC and THC) are measured then the third can always be calculated. The primary reason for originally requiring that all three parameters be measured was to track the amount of methane that is subtracted from the THC. This was important because the emission limit in this permit action was being changed from THC to NMHC. If the CEM system measures THC and NMHC we can always spot check the difference (which is methane) to see if it is in the expected range.

The A/C will be revised by -

1. removing references to monitoring and recording methane.
2. adding the monitoring and recording of the NMHC 3 hour rolling average.

D. RECOMMENDATION:

Revise A/C 20328 as described above for modifying the CEM system associated with the APC Absorption/Carbon Adsorption Vapor Processing System (previous P/O No. 14037) at the Chevron Sacramento Terminal. Re-issue A/C 20328(Rev02) with the revision date added.

Refer to conditions on Authority to Construct No. 20328(Rev02)

Reviewed by: _____ **Dat** _____

**AUTHORITY TO CONSTRUCT
ENGINEERING EVALUATION**

| | |
|------------------|------------------------|
| Application No.: | <u>A/C 20328</u> |
| Date: | <u>August 06, 2007</u> |
| Evaluation by: | <u>Bruce Nixon</u> |

A. FACILITY NAME:

Chevron Sacramento Terminal

B. LOCATION OF EQUIPMENT:2420 Front Street
Sacramento**C. PROPOSAL:**

Chevron proposes to modify the existing total hydrocarbon (THC) CEM system by installing a methane compensator so that the CEM system measures only non-methane hydrocarbons (NMHC) instead of total hydrocarbons (THC). Chevron is also requesting that the existing THC emission concentration limit of 5,000 ppmv as propane be changed to a NMHC emission concentration limit of 5,000 ppmv as propane.

D. DISCUSSION:

In March 2000 the SMAQMD issued A/C No. 14037 for Chevron to modify the APC Absorption/Carbon Adsorption system (that controls displaced gasoline vapors from gasoline tank truck loading) to install a "Smart Start" system and a NMHC CEM system. Chevron installed the equipment and notified the SMAQMD that the equipment would be operational on June 28, 2000.

After inspecting the new equipment SMAQMD determined that a THC CEM system rather than a NMHC CEM system had been installed. In a 08-22-2001 letter, the SMAQMD transmitted the language of the proposed Permit to Operate conditions to Chevron for them to review and comment. Because of Chevron's change to the CEM system, Condition No. 10 of A/C No. 14037 that limited exhaust hydrocarbon concentration to 5,000 ppmv NMHC (as propane) was proposed to be changed to limit exhaust hydrocarbon concentration to 5,000 ppmv THC (as propane). Chevron replied in writing to the proposed change with a request that the concentration be limited to 5,000 ppmv NMHC (as propane). In a 09-04-2001 phone conversation to further discuss this monitoring permit condition the SMAQMD received agreement from Chevron representatives that the permit condition would limit exhaust hydrocarbon to 5,000 ppmv THC (as propane) because THC is the pollutant that their CEM system would be measuring.

Chevron is now requesting to add a methane compensator to the existing THC CEM system, transforming it to a NMHC CEM system. They are also requesting that the exhaust hydrocarbon Permit to Operate limit be changed to 5,000 ppmv NMHC (as propane).

The concentration limit of 5,000 ppmv NMHC (as propane) is derived from the emission limit of "0.08 lb VOC (as propane)/1000 gallons of organic liquids loaded" in SMAQMD Rule 447 Organic Liquid Loading. Although the rule does not explicitly state the emission limit "as propane", the test method used by CARB in the original certification of the vapor processing system did calculate the pounds of VOC emitted "as propane". The rule uses "VOC" in the emission limit and this is generally defined as NMHC. The derivation of the concentration limit follows:

$$\begin{aligned}\text{Conc.} &\sim \frac{0.08 \text{ lb C}_3}{1000 \text{ gal}} \times \frac{7.48 \text{ gal}}{1 \text{ ft}^3 \text{ displaced air}} \times \frac{1 \text{ ft}^3 \text{ C}_3}{0.002641 \text{ lb mole C}_3} \times \frac{1 \text{ lb mole C}_3}{44.096 \text{ lb C}_3} \\ &\sim \frac{0.0051 \text{ ft}^3 \text{ C}_3}{1 \text{ ft}^3 \text{ displaced air}} \\ &\sim 5100 \text{ ppmv NMHC (as propane)}\end{aligned}$$

The derived value when rounded to 5,000 ppmv NMHC (as propane) and as measured by the proposed modified NMHC CEM system is the proper value for use as the limit in the permit.

E. EQUIPMENT DESCRIPTION:

APC Absorption/Carbon Adsorption Vapor Processing System

Previous P/O No.: 14037
Manufacturer: John Zink
Model No.: AA-2475-12-10
Type: Absorption and carbon adsorption
Capacity: 12,700 gallons/minute
312,800 gallons/hour
4,100,000 gallons/day
Venting: Loading racks at Chevron and Conoco Phillips
Transmix Tank No. 115 at Chevron

Continuous Emission Monitoring System

THC analyzer: Sieger/Optima, Infrared
Methane analyzer: Infrared Industries, Model 8400D

F. PROCESS RATE:

The APC Absorption/Carbon Adsorption Vapor Processing System can process the vapors displaced from tank truck loading at a rate of 12,700 gallons/minute, 312,800 gallons/hour and 4,100,000 gallons/day.

G. OPERATING SCHEDULE:

The APC Absorption/Carbon Adsorption Vapor Processing System may operate 24 hours/day and 92 days/quarter

H. CONTROL EQUIPMENT EVALUATION:

The APC Absorption/Carbon Adsorption Vapor Processing System has been source tested annually and source test results show that the system controls ROC emissions to the required emission level of no more than 0.08 lb VOC/1000 gallons stated in SMAQMD Rule 447. There is no change proposed to the existing APC Absorption/Carbon Adsorption Vapor Processing System.

I. EMISSIONS CALCULATIONS:

1. HISTORIC POTENTIAL TO EMIT:

This permit action involves a modification to the CEM system that monitors the ROC emissions from the APC Absorption/Carbon Adsorption Vapor Processing System(which controls the ROC emissions from tank truck loading). The modification does not affect the gasoline throughput limit at the loading racks or the SMAQMD Rule 447 emission limit for tank truck loading. There will be no change in allowable emissions from the tank truck loading process due to this modification to the CEM system.

There are no emission limits placed on the Permit to Operate for the APC Absorption/Carbon Adsorption Vapor Processing System. The emission limit is placed on the Permit to Operate for the loading rack (see P/O No. 16163) that is vented to and controlled by the APC Absorption/Carbon Adsorption Vapor Processing System. The APC Absorption/Carbon Adsorption Vapor Processing System itself does not produce any secondary emissions when operated.

Historic Potential to Emit = 0

2. PROPOSED POTENTIAL TO EMIT:

There are no emission limits placed on the Permit to Operate for the APC Absorption/Carbon Adsorption Vapor Processing system. The emission limit is placed on the Permit to Operate for the loading rack (see P/O No. 16163) that is vented to and controlled by the APC Absorption/Carbon Adsorption Vapor Processing System. The APC Absorption/Carbon Adsorption Vapor Processing System itself does not produce any secondary emissions when operated.

Proposed Potential to Emit = 0

3. CALCULATION OF BACT TRIGGER:

NEI (BACT) = Net Emissions Increase for BACT purposes
= Proposed Potential to Emit - Historic Potential to Emit
MPE = Maximum Potential Emissions based on a 24-hour day operation

| Pollutant | NEI (BACT) lb/qtr | Is NEI (BACT) >0 ? | MPE lb/day | BACT Trigger lb/day | Is BACT Required? |
|-----------|----------------------|-----------------------|---------------|------------------------|----------------------|
| ROC | 0 | No | 0 | >10 | No |

| Pollutant | NEI (BACT) lb/qtr | Is NEI (BACT) >0 ? | MPE lb/day | BACT Trigger lb/day | Is BACT Required? |
|-----------|----------------------|-----------------------|---------------|------------------------|----------------------|
| NOx | NA | NA | NA | NA | NA |
| SOx | NA | NA | NA | NA | NA |
| PM10 | NA | NA | NA | NA | NA |
| CO | NA | NA | NA | NA | NA |

4. CALCULATION OF OFFSET TRIGGER FOR ROC AND NOx:

| Permit No. | Emissions Unit | Stationary Source Potential to Emit lb/quarter | |
|----------------------|---|--|---------|
| | | ROC | NOx |
| P/O 5116 | Loading Rack | Modified to P/O 9886 | |
| P/O 5118 | Storage Tank No. 115 | No limit | 0 |
| P/O 9229 | Storage Tank No. 123 | No limit | 0 |
| P/O 9886 | Loading Rack | Modified to P/O 15024 | |
| P/O 13456 | Storage Tank No. 113 | Modified to P/O 16162 | |
| P/O 13567 | Storage Tank No. 112 | 849 | 0 |
| P/O 14037 | APC Absorption/Carbon Adsorption Vapor Processing System | Modified to A/C 20328 | |
| P/O 14424 | Storage Tank No. 124 | 1037 | 0 |
| P/O 15024 | Loading Rack | Modified to P/O 16163 | |
| P/O 16162 | Storage Tank No. 113 and Ethanol Handling System | 365 | 0 |
| P/O 16163 | Loading Rack | 21310 | 0 |
| A/C 20328 | APC Absorption/Carbon Adsorption Vapor Processing System | 0 | 0 |
| Total | | > 5,000 | 0 |
| Offset Trigger Level | | > 5,000 | > 5,000 |

5. CALCULATION OF OFFSET TRIGGER FOR SO_x, PM₁₀ AND CO:

| Permit No. | Emissions Unit | Stationary Source Cumulative Emission Increase Since 01-01-77 lb/quarter | | |
|---------------|--|---|------------------|----------|
| | | SO _x | PM ₁₀ | CO |
| P/O 5116 | Loading Rack | Modified to P/O 9886 | | |
| P/O 5118 | Storage Tank No. 115 | 0 | 0 | 0 |
| P/O 9229 | Storage Tank No. 123 | 0 | 0 | 0 |
| P/O 9886 | Loading Rack | Modified to P/O 15024 | | |
| P/O 13456 | Storage Tank No. 113 | Modified to P/O 16162 | | |
| P/O 13567 | Storage Tank No. 112 | 0 | 0 | 0 |
| P/O 14037 | APC Absorption/Carbon Adsorption Vapor Processing System | Modified to A/C 20328 | | |
| P/O 14424 | Storage Tank No. 124 | 0 | 0 | 0 |
| P/O 15024 | Loading Rack | Modified to P/O 16163 | | |
| P/O 16162 | Storage Tank No. 113 and Ethanol Handling System | 0 | 0 | 0 |
| P/O 16163 | Loading Rack | 0 | 0 | 0 |
| A/C 20328 | APC Absorption/Carbon Adsorption Vapor Processing System | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 |
| Trigger Level | | > 13,650 | > 7,500 | > 49,500 |

6. CALCULATION OF EMISSION OFFSETS FOR ROC AND NO_x:

ROC: Emission offsets are triggered for ROC. There is no quarterly change in emissions proposed for ROC. Therefore, the amount of offsets required is 0.

NO_x: Emission offsets are not triggered for NO_x.

7. CALCULATION OF EMISSION OFFSETS FOR SO_x, PM₁₀ AND CO:

SO_x: Emission offsets are not triggered for SO_x.

PM₁₀: Emission offsets are not triggered for PM₁₀.

CO: Emission offsets are not triggered for CO.

J. COMPLIANCE WITH RULES AND REGULATIONS:

1. CALIFORNIA HEALTH AND SAFETY CODE SECTION 42301.6 COMPLIANCE:

The proposed equipment is not located within 1000 feet of a K-12 school therefore California Health and Safety Code Section 42301.6 requirements for public noticing do not apply.

2. NSR COMPLIANCE:

SMAQMD Rule 202 - New Source Review

Section 112 - Exemption - Notification Requirements

The increase in Potential to Emit associated with A/C No. 20328 does not exceed the following levels requiring public noticing.

| Pollutant | For Modification to Existing Source |
|------------------|---|
| | Increase in Potential to Emit Level Requiring Public Noticing lb/quarter |
| ROC | ≥ 5,000 |
| NO _x | ≥ 5,000 |
| SO _x | ≥ 13,650 |
| PM ₁₀ | ≥ 7,500 |
| CO | ≥ 49,500 |

Section 301 - BACT

BACT is not triggered for any pollutants for this application.

Section 302 - Offsets

Offsets are triggered for ROC but not for NO_x, SO_x, PM₁₀ and CO. There are no quarterly increases in ROC emissions from the previous P/O No. 14037. Therefore, no ERCs are required for this permit action.

3. PSD COMPLIANCE:

PSD is not applicable because there is no increase in emissions associated with this permit action.

4. PROHIBITORY RULES COMPLIANCE

SMAQMD Rule 401 - Ringelmann Chart

Visible emissions are expected to comply with the 20% opacity requirement of this rule.

SMAQMD Rule 447 - Organic Liquid Loading

The existing air pollution control equipment is not being modified by this permit action. Only the CEM system that monitors the level of controlled ROC emissions is being modified. The loading rack and associated air pollution control equipment is tested annually and has shown compliance with the requirements of SMAQMD Rule 447.

5. NSPS COMPLIANCE:

U.S. EPA NSPS 40CFR60 Subpart XX - Standards of Performance for Bulk Gasoline Terminals:

Rule Description:

The purpose of this federal regulation is to limit emissions from the loading of gasoline at bulk gasoline terminals. The requirements of this federal regulation include maintaining the system leak free and vapor tight, recordkeeping and an emission limitation of 35 mg TOC/liter of gasoline loaded (~0.29 lb/1000 gallons).

Compliance Status:

The loading rack and associated air pollution control equipment are in compliance with the NSPS requirements. No changes allowed by this permit action affect the compliance status.

6. NESHAP/ATCM COMPLIANCE:

The air pollution control equipment is not subject to any federal NESHAP requirements.

F. RECOMMENDATION:

An Authority to Construct modifying the CEM system associated with the APC Absorption/Carbon Adsorption Vapor Processing System (previous P/O No. 14037) should be issued to Chevron Sacramento Terminal with the following conditions.

Refer to conditions on Authority to Construct No. 20328

Reviewed by: _____

Dat _____

**AUTHORITY TO CONSTRUCT
ENGINEERING EVALUATION**

| | |
|---------------------|----------------|
| Application No.: | A/C 22251 |
| Date: | March 01, 2010 |
| Reviewing Engineer: | Bruce Nixon |

A. FACILITY NAME:

Chevron Sacramento Terminal

B. LOCATION OF EQUIPMENT:

2420 Front Street, Sacramento 95818

C. PROPOSAL:

Chevron is requesting that an error in the description of the internal floating roof seals on P/O 16162 - Storage Tank 113 be corrected so that the actual type of seals are accurately identified.

D. INTRODUCTION:

In 2002 Chevron modified Permit to Operate No. 13456 - Tank 113 to become part of their Ethanol Storage and Handling System. The Authority to Construct application they submitted at that time described the tank as an internal floating roof with a primary shoe seal and a secondary rim mounted wiper seal. In 2009 SMAQMD inspections determined that Permit to Operate No. 16162 - Tank 113 had a primary shoe seal but no secondary seal. A Notice of Violation was issued directing Chevron to correct the violation.

Chevron has stated that Tank 113 never had a secondary seal and it was a mistake in the Authority to Construct application in 2002 to indicate that it did. When Tank 113 was permitted under Permit to Operate No. 13456, which was prior to the 2002 application, the tank description only listed a primary seal and no secondary seal. Chevron is requesting that Permit to Operate No. 16162 - Tank 113 be corrected by removing the secondary seal in the tank description.

E. EQUIPMENT DESCRIPTION:**Storage Tank 113**

| | |
|------------------------|---|
| A/C No. | 22251 |
| Previous P/O: | 16162 |
| Safe Working Capacity: | 1,030,092 gallons |
| Dimensions: | 67' diameter x 41.1' high |
| Roof Type: | internal floating roof |
| Primary Seal type: | mechanical shoe |
| Secondary Seal type: | none |
| Tank Contents: | Organic liquids with Reid Vapor Pressure less than or equal to 4.5 psia |

F. PROCESS RATE:

Tank 113 is currently permitted to have a throughput of 37,500,000 gallons/quarter and this will not change in this permitting action.

G. OPERATING SCHEDULE:

Tank 113 is currently permitted to operate 24 hours/day and 8760 hours/year and this will not change in this permitting action.

H. AIR POLLUTION CONTROL EQUIPMENT EVALUATION:

Tank 113 is an internal floating roof tank with a mechanical shoe primary seal and no secondary seal.

I. EMISSIONS CALCULATIONS:

To correct for the mistake in the seal description in the emissions calculations for P/O No. 16162, this permitting action will compare emissions from Tank 113 when it was permitted as P/O No. 13456 to Chevron's requested configuration under this A/C No. 22251. The specific operating characteristics for each tank configuration are listed in the table below.

| Tank 113 | P/O No. 13456 | A/C 22251 |
|-----------------|-----------------------------|---------------------------------------|
| Primary seal | mechanical shoe | mechanical shoe |
| Secondary seal | none | none |
| Material stored | TVP < 11 (i.e. gasoline) | RVP < 4.5 (i.e. denatured ethanol) |
| Throughput | 37,500,000 gallons/quarter | 37,500,000 gallons/quarter |

1. HISTORIC POTENTIAL EMISSIONS:

Tank 113 is an existing permit unit and this permitting action is considered a non-major modification, therefore:

Historic Potential Emissions = potential to emit (based on permitted emissions).

The total tank emissions are in two parts -

1. Tank emissions from the U.S. EPA TANKS 4.09d program (see Attachment A).
 - a. Tank parameters are shown in The TANKS 4.09d program output.
 - b. The stored material is gasoline with an RVP = 10

2. Equipment leaks based on U.S. EPA Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995, Table 2-3, Marketing Terminal Screening Ranges Emission Factors.

The number of components is based on a March 19, 2002 document prepared by SECOR International for Chevron (see Attachment B). The number of components is the total from:

- a. Gasoline Receiving Equipment to Tank 113 and
- b. Gasoline Distribution Equipment from Tank 113 to the loading rack.

P/O 13456 Tank 113 (Tank Losses from TANKS 4.09d program)

| Pollutant | Emission Factor | Maximum Allowable Emissions | |
|-----------|----------------------|-----------------------------|----------------|
| | | lb/day (A) | lb/quarter (B) |
| ROC | U.S. EPA TANKS 4.09d | 10 | 919 |
| NOx | NA | 0 | 0 |
| SO2 | NA | 0 | 0 |
| PM10 | NA | 0 | 0 |
| CO | NA | 0 | 0 |
| CO2e | NA | 0 | 0 |

(A) Lb/day is lb/year from the U.S. EPA TANKS 4.09d program divided by 365.

(B) Lb/quarter is lb/year from the U.S. EPA TANKS 4.09d program divided by 4.

P/O 13456 Tank 113 (U.S. EPA Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995, Table 2-3, Marketing Terminal Screening Ranges Emission Factors)

| Component | Number of Components | TOC Emission Factor kg/hr-component | Quarterly Emissions lb/quarter |
|------------|----------------------|--|-----------------------------------|
| Valves | 13 | 4.3 E-5 | 2.8 |
| Pump Seals | 2 | 5.4 E-4 | 5.3 |
| Fittings | 20 | 8.0 E-6 | 0.8 |
| Other | 21 | 1.3 E-4 | 13.3 |
| Total ROC | | | 22 |

The historic potential ROC emissions for Tank 113 = 919 + 22 = 941 pounds/quarter.

2. PROPOSED POTENTIAL TO EMIT:

The total tank emissions are in two parts -

1. Tank emissions from the U.S. EPA TANKS 4.09d program (see Attachment A).

- a. Tank parameters are shown in The TANKS 4.09d program output.
- b. The stored material is 95.24% by volume ethanol and 4.76% by volume gasoline with an RVP = 10 based on the MSDS submitted with the permit application. The 4.76% by volume gasoline is the maximum of the gasoline range stated in the MSDS. It is assumed that the gasoline RVP is 10.

The TANKS 4.09d program needs the ethanol and gasoline content of the mixture in % by weight. The following is the calculation to convert from % by volume to % by weight.

$$\begin{aligned}
 \text{gasoline} &= \frac{(0.0476 \text{ gallon}) \times (5.6 \text{ lb/gallon})}{(0.0476 \text{ gallon}) \times (5.6 \text{ lb/gallon}) + (0.9524 \text{ gallon}) \times (6.61 \text{ lb/gallon})} \\
 \% \text{ by weight} &= \frac{0.2666}{6.2954} \\
 &= 4.23\% \text{ (and therefore ethanol = 95.77\% by weight)}
 \end{aligned}$$

2. Equipment leaks based on U.S. EPA Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995.

The number of components is based on a March 19, 2002 document prepared by SECOR International for Chevron (see Attachment B). The number of components is the total from:

- a. Ethanol Receiving Equipment to Tank 113 and
- b. Ethanol Distribution Equipment from Tank 113 to the loading rack.

A/C 22251 Tank 113 (Tank Losses from TANKS 4.09d program)

| Pollutant | Emission Factor | Maximum Allowable Emissions | |
|-----------|----------------------|-----------------------------|----------------|
| | | lb/day (A) | lb/quarter (B) |
| ROC | U.S. EPA TANKS 4.09d | 0.6 | 201 |
| NOx | NA | 0 | 0 |
| SO2 | NA | 0 | 0 |
| PM10 | NA | 0 | 0 |
| CO | NA | 0 | 0 |
| CO2e | NA | 0 tons/year | 0 tons/year |

- (A) Lb/day is lb/year from the U.S. EPA TANKS 4.09d program divided by 365.
(B) Lb/quarter is lb/year from the U.S. EPA TANKS 4.09d program divided by 4.

A/C 22251 Tank 113 (U.S. EPA Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995, Table 2-3, Marketing Terminal Screening Ranges Emission Factors)

| Component | Number of Components | TOC Emission Factor kg/hr-component | Quarterly Emissions lb/quarter |
|------------------|----------------------|--|-----------------------------------|
| Valves | 267 | 4.3 E-5 | 55.3 |
| Pump Seals | 2 | 5.4 E-4 | 5.3 |
| Fittings | 425 | 8.0 E-6 | 16.5 |
| Other components | 201 | 1.3 E-4 | 126 |
| Total ROC | | | 203 |

The proposed potential ROC emissions for Tank 113 = 201 + 203 = 404 pounds/quarter.

3. CALCULATION OF BACT TRIGGER:

NEI (BACT) = Net Emissions Increase for BACT trigger purposes
 = Proposed Potential to Emit - Potential to Emit prior to modification
 (calculation uses values from the quarter that results in the largest NEI)

MPE = Maximum Potential Emissions for a 24-hour day operation

A/C 22251 Tank 113

| Pollutant | NEI (BACT) lb/quarter | Is NEI (BACT) > 0 ? | MPE lb/day | BACT Trigger lb/day | Is BACT Required? |
|-----------|--------------------------|------------------------|---------------|------------------------|----------------------|
| ROC | -537 | No | 4.5 | ≥ 10 | No |
| NOx | 0 | No | 0 | ≥ 10 | No |
| SO2 | 0 | No | 0 | ≥ 10 | No |
| PM10 | 0 | No | 0 | ≥ 10 | No |
| CO | 0 | No | 0 | ≥ 550 | No |

4. CALCULATION OF OFFSET TRIGGER FOR ROC AND NOx:

 Indicates active permit

| Permit No. | Emissions Unit | Stationary Source Potential to Emit lb/quarter | |
|----------------------|--|--|---------|
| | | ROC | NOx |
| P/O 5116 | Loading Rack | Modified to P/O 9886 | |
| P/O 5118 | Storage Tank No. 115, Transmix | No limit | 0 |
| P/O 9229 | Storage Tank No. 123 | No limit | 0 |
| P/O 9886 | Loading Rack | Modified to P/O 16163 | |
| P/O 13456 | Storage Tank No. 113 | Modified to P/O 16162 | |
| P/O 13567 | Storage Tank No. 112 | 849 | 0 |
| P/O 14037 | APC Absorption/Carbon Adsorption Vapor Processing System | Modified to A/C 20328 | |
| P/O 14424 | Storage Tank No. 124 | 1037 | 0 |
| P/O 16162 | Storage Tank No. 113 and Ethanol Handling System | Modified to A/C 22251 | |
| P/O 16163 | Loading Rack | 21310 | 0 |
| A/C 20328 | APC Absorption/Carbon Adsorption Vapor Processing System | 0 | 0 |
| A/C 21393 | Storage Tank No. 116, Transmix | Permit Cancelled | |
| A/C 22251 | Storage Tank No. 113 and Ethanol Handling System | 404 | 0 |
| Total | | > 5,000 | 0 |
| Offset Trigger Level | | ≥ 5,000 | ≥ 5,000 |

5. CALCULATION OF OFFSET TRIGGER FOR SO₂, PM₁₀ AND CO:

 Indicates active permit

| Permit No. | Emissions Unit | Stationary Source Cumulative Emission Increase Since 01-01-77 lb/quarter | | |
|---------------|--|---|------------------|----------|
| | | SO ₂ | PM ₁₀ | CO |
| P/O 5116 | Loading Rack | Modified to P/O 9886 | | |
| P/O 5118 | Storage Tank No. 115, Transmix | 0 | 0 | 0 |
| P/O 9229 | Storage Tank No. 123 | 0 | 0 | 0 |
| P/O 9886 | Loading Rack | Modified to P/O 16163 | | |
| P/O 13456 | Storage Tank No. 113 | Modified to P/O 16162 | | |
| P/O 13567 | Storage Tank No. 112 | 0 | 0 | 0 |
| P/O 14037 | APC Absorption/Carbon Adsorption Vapor Processing System | Modified to A/C 20328 | | |
| P/O 14424 | Storage Tank No. 124 | 0 | 0 | 0 |
| P/O 16162 | Storage Tank No. 113 and Ethanol Handling System | Modified to A/C 22251 | | |
| P/O 16163 | Loading Rack | 0 | 0 | 0 |
| A/C 20328 | APC Absorption/Carbon Adsorption Vapor Processing System | 0 | 0 | 0 |
| A/C 21393 | Storage Tank No. 116, Transmix | Permit Cancelled | | |
| A/C 22251 | Storage Tank No. 113 and Ethanol Handling System | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 |
| Trigger Level | | ≥ 13,650 | ≥ 7,500 | ≥ 49,500 |

6. CALCULATION OF EMISSION OFFSETS FOR ROC AND NOx:

ROC: Emission offsets are triggered for ROC. The proposed maximum allowable ROC emissions are:

| Proposed Maximum Allowable ROC Emissions lb/quarter | | | |
|--|-----------|-----------|-----------|
| Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
| 404 | 404 | 404 | 404 |

The facility emissions, prior to this permit action, already exceeded the emission offset applicability level of 5,000 lb ROC/quarter. Therefore, the amount of emission offsets required is equal to the proposed maximum allowable ROC emissions from Storage Tank No. 113 minus the historic actual emissions from Storage Tank No. 113, which is:

| Storage Tank No. 113 | ROC Emission Offsets Required lb/quarter | | | |
|-------------------------------|---|-----------|-----------|-----------|
| | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
| Proposed Emissions | 404 | 404 | 404 | 404 |
| Historic Emissions | 941 | 941 | 941 | 941 |
| Net Emission Offsets Required | -537 | -537 | -537 | -537 |

NOx: Emission offsets are not triggered for NOx.

7. CALCULATION OF EMISSION OFFSETS FOR SO2, PM10 AND CO:

SO2: Emission offsets are not triggered for SO2.

PM10: Emission offsets are not triggered for PM10.

CO: Emission offsets are not triggered for CO.

J. COMPLIANCE WITH RULES AND REGULATIONS:

1. CALIFORNIA HEALTH AND SAFETY CODE SECTION 42301.6 COMPLIANCE:

The permit unit is not located within 1000 feet of a K-12 school. Therefore, the California Health and Safety Code Section 42301.6 requirements for public noticing do not apply.

2. NSR COMPLIANCE:

Rule 202 - New Source Review

Section 112 - Exemption - Notification Requirements

The increase in Potential to Emit associated with this permit action does not exceed the following levels requiring public noticing.

| Pollutant | Increase in Potential to Emit Level Requiring Public Noticing lb/quarter |
|-----------|---|
| ROC | ≥ 5,000 |
| NOx | ≥ 5,000 |
| SO2 | ≥ 13,650 |
| PM10 | ≥ 7,500 |
| CO | ≥ 49,500 |

Section 301 - BACT

BACT is not triggered for ROC, NOx, SO2, PM10 and CO.

Section 302 - Emission Offsets

Emission offsets are not triggered for NOx, SO2, PM10 and CO.

Emissions offsets are triggered for ROC but the amount of ROC offsets required is 0 as explained above.

Section 307 - Denial, Failure to Meet CEQA

The SMAQMD utilizes the *Guide to Air Quality Assessment in Sacramento County, SMAQMD, July 2004* as a guide during the initial study phase of a proposed project to determine the level of review necessary under CEQA.

- ROG and NOx: The average daily project emissions are 4.5 lb/day of ROG and 0 lb/day of NOx. These emission levels are below the CEQA review trigger levels of 65 lb/day.
- Other pollutants: The project does not result in operational emissions that could lead to violations of any applicable state Ambient Air Quality Standards.
- Toxic Air Contaminants (TACs): The project is not required to comply with T-BACT because the project risk does not exceed 1 in 1 million.

A recent Toxic Hot Spots (AB2588) report titled "AB2588 Health Risk Assessment for the Chevron Products Company - Sacramento Marketing Terminal", February 2010, AECOM Inc., presented the following results.

Cancer Risk

Maximum Exposed Individual Resident 0.13 in 1 million

Maximum Exposed Individual Worker 0.24 in 1 million

The presented results are less than 1 in 1 million for cancer risk. Therefore the modification to Tank 113 is exempt from T-BACT.

- d. Cumulative TACs: The project is not located near any sources identified in the CARB Toxics Hot Spot Program (AB2588) which result in a cumulative risk greater than 10 in one million.

The only source that is nearby and identified in the CARB Toxics Hot Spot Program (AB2588) is the Conoco Phillips bulk terminal. The gasoline throughput at the Conoco Phillips bulk terminal is less than the gasoline throughput at the Chevron Sacramento bulk terminal. The cancer risk associated with the Conoco Phillips bulk terminal should therefore be less than the cancer risk associated with the Chevron Sacramento bulk terminal. The two bulk terminals combined should have a cancer risk much less than 10 in 1 million.

This permitting action does not exceed any of the criteria above, therefore the project does not require further CEQA review.

3. PSD COMPLIANCE:

A PSD analysis is not required because there are no emissions of an attainment pollutant that exceed the following levels -

| Attainment Pollutants within the SMAQMD | Primary PSD Applicability Level (A) (i.e. federal PSD "major" source level) tons/year | Secondary PSD Applicability Level (B) (i.e. federal PSD "significance" level) tons/year |
|---|---|---|
| NO2 | ≥ 250 | ≥ 40 |
| SO2 | ≥ 250 | ≥ 40 |
| CO | ≥ 250 | ≥ 100 |

(A) Except that the "major" source level is ≥ 100 tons/year for stationary sources listed in 40 CFR 51.166(b)(1)(i)(a).

(B) If emissions of one of the "attainment" pollutants qualifies the stationary source as a federal PSD "major" source, then PSD is also applicable to any other "attainment" pollutant that exceeds the federal PSD "significance" level for both (1) the project emissions increase **and** (2) the facility net emissions increase.

4. PROHIBITORY RULES COMPLIANCE

SMAQMD Rule 401 - Ringelmann Chart

Visible emissions from Tank 113 are expected to comply with the 20% opacity requirement of this rule.

SMAQMD Rule 402 - Nuisance

Operation of Tank 113 is not expected to create a nuisance.

Ethanol is not considered a Toxic Air Contaminant (TAC) but it is denatured with 4.23% gasoline (by weight) which emits TAC. The Authority to Construct and Permit to Operate will be conditioned to limit the organic liquid stored in Tank 113 to a maximum Reid Vapor Pressure of 4.5 psia and a True Vapor Pressure of 11 psia.

There is a possibility that different organic liquids stored in Tank 113 in the future may emit new TACs even though the organic liquid meets the vapor pressure requirements. The new TACs will not have been assessed for their cancer, chronic and acute risk. An additional requirement will be placed on the Authority to Construct and Permit to Operate for Chevron to receive APCO approval for any new organic liquid stored.

SMAQMD Rule 446

Tank 113 will comply with SMAQMD Rule 446 Section 312 by using an internal floating roof.

5. NEW SOURCE PERFORMANCE STANDARDS (NSPS) COMPLIANCE:

The following discussion is to show that Tank 113 is not subject to -

40 CFR 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction or Modification Commenced after July 23, 1984.

Tank 113 has not been constructed or reconstructed (using the U.S. EPA definition in 40 CFR 60.15) since July 23, 1984. It has also not been modified as defined in 40 CFR 60.2. The definition of a modification, as found in Section 60.2, is "any physical change in, or change in method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted to the atmosphere by that facility, or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted." The change from storing gasoline to storing denatured ethanol results in a reduction in VOC emissions.

Therefore Subpart Kb is not applicable to Tank 113.

6. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

40 CFR 63 Subpart R - National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)

As documented in the Statement of Basis for Title V permit TV2006-06-01 (07-17-2007) only a portion of Subpart R is applicable because the calculated value of ET is less than 0.5. The following requirements are those applicable to Tank 113.

40 CFR 63.420(d) -

1. Operate the facility such that none of the facility parameters used to calculate results under paragraph (a)(1) or (b)(1) of this section is exceeded in any rolling 30-day period; and
2. Maintain records and provide reports in accordance with the provisions of 40 CFR 63.428(j).

40 CFR 63.428(j) states:

- (j) Each owner or operator of a facility meeting the criteria in §63.420(d) shall perform the requirements of this paragraph (j), all of which will be available for public inspection:
 - (1) Document and report to the Administrator not later than December 16, 1996 for existing facilities, within 30 days for existing facilities subject to §63.420(d) after December 16, 1996, or at startup for new facilities the use of the emission screening equations in §63.420(a)(1) or (b)(1) and the calculated value of E_T or E_P ;
 - (2) Maintain a record of the calculations in §63.420 (a)(1) or (b)(1), including methods, procedures, and assumptions supporting the calculations for determining criteria in §63.420(d); and
 - (3) At any time following the notification required under paragraph (j)(1) of this section, and prior to any of the parameters being exceeded, the owner or operator may notify the Administrator of modifications to the facility parameters. Each such notification shall document any expected HAP emission change resulting from the change in parameter.

The following discussion is to show that Tank 113 is not subject to -

40 CFR 63 Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

Based on the following section from 40 CFR 63 Subpart H, Tank 113 would not be subject to Subpart H because Subpart R does reference Subpart H (see underlined wording).

63.160 Applicability and designation of source.

- (a) The provisions of this subpart apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems required by this subpart that are intended to operate in organic

hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR part 63 that references this subpart.

The following discussion is to show that Tank 113 is not subject to -

40 CFR 63 Subpart BBBBBB - National Emission Standards for Hazardous Air Pollutants for Source Categories: Gasoline Distribution Bulk Terminals, Bulk Plants and Pipeline Facilities.

Tank 113 stores denatured ethanol and not gasoline and therefore Subpart BBBBBB is not applicable.

7. CARB AIR TOXIC CONTROL MEASURES (ATCM) COMPLIANCE:

There are no CARB ATCMs that are applicable to storage tanks at bulk terminals.

K. RECOMMENDATION:

The modification to the seal description and related emissions for the existing Tank 113 should comply with all applicable SMAQMD, CARB and U.S. EPA rules and regulations.

An Authority to Construct should be issued to Chevron Sacramento Terminal to modify the permit seal description and operating conditions for the existing Tank 113 with the following conditions.

Refer to conditions on Authority to Construct No. 22251

REVIEWED BY: _____ DATE: _____

ATTACHMENT A

U.S. EPA TANKS 4.09d Program
Emission Estimates for Chevron Tank 113

ATTACHMENT B

Description of Equipment Leak Components
Associated with Chevron Tank 113
Pre and Post Construction